UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,080	01/24/2002	Abdul Malik	0152.00424	3341

21901 7590 02/02/2005

SMITH & HOPEN PA
15950 BAY VISTA DRIVE
SUITE 220
CLEARWATER, FL 33760

EXAMINER	
THERKORN, ERNEST G	
ART UNIT	**PAPER NUMBER**
1723	

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/057,080	MALIK ET AL.	
	Examiner	Art Unit	
	Ernest G. Therkorn	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) *10-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guo (Anal. Chem. 1995, 67, 2511-2516) in view of Wang (Anal. Chem. 1997,69, 4566-4576), Snyder, (Introduction to Modern Liquid Chromatography, John Wiley & Sons, New York (1979), pages 278-280) and Zhang (Journal of Liquid Chromatography, 18(17), 2273-3396 (1995). At best, the claims differ from Guo (Anal. Chem. 1995, 67, 2511-2516) in reciting use of a charged coating and deactivation. Zhang (Journal of Liquid Chromatography, 18(17), 2273-3396 (1995) (Abstract) discloses substituting octadecyldimethyl(propylsilyl) ammonium groups for C_{18} leads to unique chromatographic selectivity. A fair reading of Snyder, (Introduction to Modern Liquid Chromatography, John Wiley & Sons, New York (1979), pages 278-280) would indicate that Guo (Anal. Chem. 1995, 67, 2511-2516)'s C_8 and Zhang (Journal of Liquid Chromatography, 18(17), 2273-3396 (1995)'s C_{18} compounds are in the same family of reversed phase compounds. Wang (Anal. Chem. 1997,69, 4566-4576) (page 4569, column 1, lines 15-23) discloses that sol gel technology allows the stationary phase to be the deactivation agent. Wang (Anal. Chem. 1997,69, 4566-4576) (page 4566, column 2, lines 4-13) discloses that deactivation is critically important in the separation of polar compounds that are prone to undergo adsorptive interactions with the silanol

groups on the inner walls. It would have been obvious to use octadecyldimethyl(propylsilyl) ammonium groups in Guo (Anal. Chem. 1995, 67, 2511-2516) because Zhang (Journal of Liquid Chromatography, 18(17), 2273-3396 (1995) (Abstract) discloses substituting octadecyldimethyl(propylsilyl) ammonium groups for C_{18} leads to unique chromatographic selectivity and a fair reading of Snyder, (Introduction to Modern Liquid Chromatography, John Wiley & Sons, New York (1979), pages 278-280) would indicate that Guo (Anal. Chem. 1995, 67, 2511-2516)'s C_8 and Zhang (Journal of Liquid Chromatography, 18(17), 2273-3396 (1995)'s C_{18} compounds are in the same family of reversed phase compounds. It would have been obvious that Guo (Anal. Chem. 1995, 67, 2511-2516) in view of Snyder, (Introduction to Modern Liquid Chromatography, John Wiley & Sons, New York (1979), pages 278-280) and Zhang (Journal of Liquid Chromatography, 18(17), 2273-3396 (1995)'s column is deactivated because Wang (Anal. Chem. 1997,69, 4566-4576) (page 4569, column 1, lines 15-23) discloses that sol gel technology allows the stationary phase to be the deactivation agent. In any event, it would have been obvious to deactivate in Guo (Anal. Chem. 1995, 67, 2511-2516) in view of Snyder, (Introduction to Modern Liquid Chromatography, John Wiley & Sons, New York (1979), pages 278-280) and Zhang (Journal of Liquid Chromatography, 18(17), 2273-3396 (1995) because Wang (Anal. Chem. 1997,69, 4566-4576) (page 4566, column 2, lines 4-13) discloses that deactivation is critically important in the separation of polar compounds that are prone to undergo adsorptive interactions with the silanol groups on the inner walls.

Claims 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guo (Anal. Chem. 1995, 67, 2511-2516) in view of Wang (Anal. Chem. 1997,69, 4566-4576), Snyder, (Introduction to Modern Liquid Chromatography, John Wiley & Sons, New York (1979), pages 278-280) and Zhang (Journal of Liquid Chromatography, 18(17), 2273-3396 (1995) as applied to claims 1-9 above, and further in view of Frechet (U.S. Patent No. 5,431,807). At best, the claims differ from Guo (Anal. Chem. 1995, 67, 2511-2516) in view of Wang (Anal. Chem. 1997,69, 4566-4576), Snyder, (Introduction to Modern Liquid Chromatography, John Wiley & Sons, New York (1979), pages 278-280) and Zhang (Journal of Liquid Chromatography, 18(17), 2273-3396 (1995) in reciting use of multiple modes. Frechet (U.S. Patent No. 5,431,807) (column 4, lines 52-58, column 6, lines 62-63, column 12, lines 30-31, and column 18, lines 58-60) discloses that combining reversed phase groups and ion exchange groups on a single support allows for separation without changing columns or media and is different very gentle toward proteins. It would have been obvious to use reversed phase groups with ion exchange groups in Guo (Anal. Chem. 1995, 67, 2511-2516) in view of Wang (Anal. Chem. 1997,69, 4566-4576), Snyder, (Introduction to Modern Liquid Chromatography, John Wiley & Sons, New York (1979), pages 278-280) and Zhang (Journal of Liquid Chromatography, 18(17), 2273-3396 (1995) because Frechet (U.S. Patent No. 5,431,807) (column 4, lines 52-58, column 6, lines 62-63, column 12, lines 30-31, and column 18, lines 58-60) discloses that combining reversed phase groups and ion exchange groups on a single support allows for separation without changing columns or media and is different very gentle toward proteins.

The remarks urge patentability based upon electro-osmotic flow (EOF). However, electro-osmotic flow (EOF) would not appear to be present in the claims.

The remarks urge patentability based upon use of a charged surface to control direction of the mobile phase through the column. However, use of a charged surface to control direction of the mobile phase through the column would not appear to be present in the claims.

The remarks urge patentability based upon deactivation. However, Wang (Anal. Chem. 1997,69, 4566-4576) (page 4569, column 1, lines 15-23) discloses that sol gel technology allows the stationary phase to be the deactivation agent. Wang (Anal. Chem. 1997,69, 4566-4576) (page 4566, column 2, lines 4-13) discloses that deactivation is critically important in the separation of polar compounds that are prone to undergo adsorptive interactions with the silanol groups on the inner walls. It would have been obvious that Guo (Anal. Chem. 1995, 67, 2511-2516) in view of Snyder, (Introduction to Modern Liquid Chromatography, John Wiley & Sons, New York (1979), pages 278-280) and Zhang (Journal of Liquid Chromatography, 18(17), 2273-3396 (1995)'s column is deactivated because Wang (Anal. Chem. 1997,69, 4566-4576) (page 4569, column 1, lines 15-23) discloses that sol gel technology allows the stationary phase to be the deactivation agent. In any event, it would have been obvious to deactivate in Guo (Anal. Chem. 1995, 67, 2511-2516) in view of Snyder, (Introduction to Modern Liquid Chromatography, John Wiley & Sons, New York (1979), pages 278-280) and Zhang (Journal of Liquid Chromatography, 18(17), 2273-3396 (1995) because Wang (Anal. Chem. 1997,69, 4566-4576) (page 4566, column 2, lines 4-13) discloses

that deactivation is critically important in the separation of polar compounds that are prone to undergo adsorptive interactions with the silanol groups on the inner walls.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to E. Therkorn at telephone number (571) 272-1149. The official fax number is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ernest G. Therkorn
Primary Examiner
Art Unit 1723

EGT
January 31, 2005